

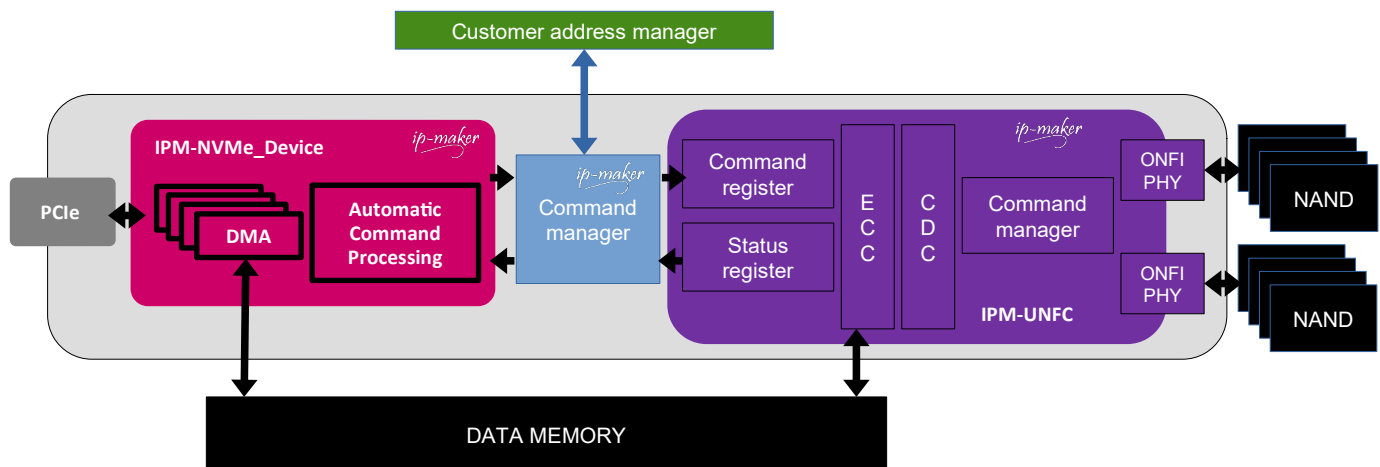
SSD Reference Design

Key Features

- ↳ NVM Express compliant
- ↳ 1 to X NAND flash
- ↳ Users only manage addresses
- ↳ A direct access in data memory to have user specific management

Overview

This architecture proposal is based on NVMe and NAND Flash Controller offloaded IPs. It is integrated in a FPGA and could be also be integrated in ASIC, allowing to provide design flexibility and the ability to add processing accelerator IPs, computational storage.... IPM-SSD solution is the perfect base to create your own PCIe NVMe SSD.



Deliverables

- ↳ Verilog RTL source code
- ↳ Software source code
- ↳ Synthesis scripts
- ↳ Technical documentation
- ↳ Technical support

Customer still manage the address management strategy and also have the possibility to read/write specific datas in the system thanks to a dedicated area in the data memory.

IPM-SSD is the perfect base to quickly develop custom SSD without many knowledge and investments. In addition IP-Maker provides IPM-service to help customization.

Related IP cores

IPM-NVMe_Device

The IPM-NVMe_Device IP core is a verilog IP ready to be integrated in a FPGA/ASIC. IP-Maker has developed a full hardware implementation of the NVMe protocol on the device side. It is based on an Automatic Command Processing Unit and a multi-channel DMA to perform data transfers.

This architecture is easy to integrate with standard interfaces (AXI/Avalon), between the PCIe and memory controllers. This low latency design is ready to support emerging memories, such as MRAM and ReRAM technologies. The IP-Maker IP-NVMe_Device IP is UNH-IOL NVM Express compliant.

IPM-UNFC

The IPM-UNFC IP core is a verilog IP ready to be integrated in a FPGA/ASIC. This IP is a full hardware implementation to store data inside NAND matrix. IPM-UNFC embeds an hardware ECC that is customizable to the NAND flash vendor's requirements. IP-Maker provides 2 types of ECC either BCH or LDPC.

Evaluation Board Ready

☞ Xilinx VMK180 evaluation board



www.ip-maker.com
contact@ip-maker.com
+33 972 366 513

Les Néréides - 55 rue Pythagore
13290 Aix en Provence / France